

## **AUTOMATED CONFIGURATION OF SYSTEMS COMPRISING PRODUCT COMPONENTS OF HETEROGENEOUS CONTEXTS**

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### **ABSTRACT OF THE DISCLOSURE**

10 An automated heterogeneous configurator employs a technique by which the state of a  
context can be changed and restored automatically to facilitate the configuration of systems  
having components that span multiple contexts. The technique employs a high level  
constraint that is programmed into the component class of a model that requires a component  
15 object to determine the appropriate context for that object at the beginning of its installation  
within the configuration, and if the current state of the context is not that which is appropriate  
for the object component, the installation process for the component changes the state of the  
context to reflect that which is appropriate for the component. Each time the configuration  
engine encounters a decision point statement, such as a `requires_component`, the current  
20 state of the context is cached, so that if a subsequent installation of a component object  
changes the state, the current state can be later restored automatically upon completion of the  
installation of the component. In the event that the installation of an object that has changed  
the current state of the context generates as part of its installation additional  
25 `requires_component` statements, they are processed in the same manner. If the installation  
of any of these component objects changes the state, the process becomes nested and the  
restoration of the cached state occurs each time the installation of an object completes that  
had changed the current state of the context. The most common context is the product line  
context, but any other context pertinent to the configuration of heterogeneous systems can be  
applied to this technique.